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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,393	12/07/2000	Kunihiko Take	09792909-4719	9869

26263 7590 06/03/2005

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EXAMINER

BALI, VIKKRAM

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,393

Applicant(s)

TAKE, KUNIHIKO

Examiner

Mehrdad Dastouri

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed December 30, 2004, has been entered and made of record.

Response to Arguments

2. Applicant's arguments filed December 30, 2004, have been fully considered but they are not persuasive. Applicant argues in essence that prior art of record (Lin) does not disclose re-instruction editing means.

The Examiner disagrees and indicates that the classification result re-instructing means disclosed by Lin also performs editing as disclosed in Column 30, Lines 22-48. If a defect has been correctly detected and outlined but wrongly classified, that defect –with correct classification– may be entered into the knowledgebase if it is a typical defect of that class. The easily accessible and flexible architecture of the defect knowledgebase 50 allows for quick changes, fine tuning, regular maintenance, and optimization of the performance of the defect knowledgebase 50 that are desirable under production conditions due to changes in wafer processes, the need to provide more specific or more general classifications, changes in defect characteristics and frequency, and the emergence of new defects. This maintenance can be carried out by an operator or automatically using the knowledgebase analyzer 48 (FIG. 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US 6,292,582) in view of Takagi et al. (US 6,438,438).

Regarding claim 1, Lin et al. ("Lin") discloses a semiconductor wafer examination system (Abstract, lines 1-3) including a defect classification device adapted to pick up an image of the surface of a defective semiconductor wafer, compare the defect image with an image of the surface of a normal semiconductor wafer, identify each defective area isolated as a characteristic area of a defect in the defect image (Col. 16, lines 30-51) on the basis of the outcome of the comparison and defect detection parameters (Col. 19, lines 54-61 and Col. 20, lines 1-9) for defining threshold values for defects and automatically determine the type of defect characteristic quantity of the defective area on the basis of a knowledge base for determining the type of defect according to the characteristic quantity of the defective area (Col. 29, lines 42-67).

Lin further discloses a classification support device including:

a classification means for identifying the defective areas of a plurality of defect images on the basis of the normal image and the defect detection parameters and classifying the identified areas (Col. 29, lines 56-67);

a defective area display means for displaying images and information generated by the defect classification (Col. 17, lines 62-67, Col. 18, lines 1-5);

and editing means for editing the defect detection parameters on the basis of the defective areas displayed by the defective area display means (Col. 17, lines 62-67, Col. 18, lines 1-5);

the editing means including defect detection parameter read means for reading out from a defect parameter storage device (Col. 8, lines 22-67, Col. 9, lines 1-3), defect detection parameter selection means so as to select for all the defect parameters (Col. 28, lines 61-67) and defect detection parameter manual selection means so that values may be selected individually by the user on the basis of the defect detection parameter shown on the defective area display means (Col. 7, lines 1-6; Col. 8, lines 55-59; Col. 29, lines 4-15; Col. 30, lines 39-62; Col. 31, lines 15-19 and 38-46);

a classification result re-instruction editing means for manually re-classifying the result of the classification of the defective areas obtained by the classification means, if the result of classification obtained by the detected defect classification means on the basis of the known knowledge base is wrong or the detected data can not be automatically classified by the detected defect classification means (Col. 30, lines 15-48);

and a selection means for selecting classified defect image data for preparing the knowledge base from the plurality of defective areas as classified by the classification result re-instruction editing means (Col. 30, lines 27-48).

Lin discloses displaying defect images to enable the operator to obtain an overall view of defect patterns and trends (Col. 7, lines 24-33; Col. 17, lines 62-67), but does not appear to expressly state displaying the plurality of defective areas as classified.

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However, Takagi et al. ("Takagi") teaches that it is known to display the plurality of defective areas as classified (Col. 4, lines 6-12). Lin and Takagi are combinable because they are from the same field of endeavor of defect classification. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the display means disclosed by Lin to include displaying the plurality of defective areas as taught by Takagi. The motivation for doing so would have been because it provides the operator with information visually showing the result of the defect classification and enables the operator to change the information. Therefore, it would have been obvious to combine Lin with Takagi to obtain the invention as specified in Claim 1.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (571) 272-7418. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (571) 272-7414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mehrdad Dastouri
Primary Examiner
Art Unit 2623
May 29, 2005

**MEHRDAD DASTOURI
PRIMARY EXAMINER**

Mehrdad Dastouri